

THE BAMBOO BIKES FROM GHANA

Low-cost, high quality and locally produced

By Kim Assaël

[Ghana Bamboo Bikes](#) was selected as a winner of the 2010 UNEP Seed Initiative Award, the global partnership for action on sustainable development and the green economy. The Ghana Bamboo Bikes Initiative takes advantage of the abundant bamboo found in Ghana to design, develop, and market bamboo bikes frames and related products and services. The initiative also offers basic course and practical lessons on building bamboo bikes and supporting structures.

Ghana Bamboo Bikes works in partnership with *African Items Company* for the sharing of resources and exchange of technical expertise relevant for the bamboo bike building industry in Ghana. The *African Items Company Limited* is an innovative company made up of talented artisans that specialize in building bamboo bike frames to export to the USA, Europe and Asian markets. *African Items Company* uses treated bamboo to build bicycles. Ghana Bamboo Bikes has also established a partnership with a local investor in Kumasi (Ghana) who leased a production facility in the city and reached agreements to harvest local bamboo for a bamboo bicycle production facility.

The Bamboo Bikes won many other international prizes as inclusive business model that deliver both commercial success and help improve social, economic or environmental conditions.

The bamboo bicycle has a frame shaped by bamboo, with an incredible tensile strength, with the wheels, handle bars and seats made of conventional materials. They are built by highly skilled indigenous artisans from rural Ghana and they are not only comfortable, customized and of high quality; they are also suitable for the high terrain in rural areas and the sub region and purposeful for the needs of the rural dwellers thus providing convenient transportation for farmers to carry goods to their farms and markets.

The innovation takes advantage of the abundant African-grown material and the bamboo's fastest growing canopy for re-greening of degraded lands. Bamboo is very strong, light and abundantly available locally as raw material. Bamboo has great vibration damping characteristics. Bamboo has also an exceptional durability especially if the poles are treated. To prevent water-damage the bamboo can be coated with a sealant such as polyurethane.

Bicycles can be built using bamboo for the main tubing elements, being an eco-friendly, organic, non polluting and recyclable product with a natural capacity of absorbing shocks and vibrations and having a big load bearing capacity (a square inch of bamboo can carry a weight of 500 pounds, and its tensile strength is 28,000 newtons, compared to 23,000 for steel).



The challenge still today is to design, develop, and market bamboo bikes, frames and related products and services. The project's goal in Ghana is to help local investors to start factories that make low cost, high quality, locally produced bamboo bikes to be widely distributed in Sub-Saharan Africa. The [Earth Institute](#) of the Columbia University, partner in starting the bike-project, analyzed the feasibility of bamboo bicycle production in Ghana and found that the bamboo bikes could be produced for \$50 (significantly less than the imported bikes from China or India).

Bamboo bicycles have the potential to be a sustainable business that provides local employment. Production of bicycle frames and assembly of bicycles would be thus completed by small enterprises, because the manufacturing of bamboo bicycle frames does not require extensive infrastructure (or even electricity), therefore the production process is suitable even in areas away from power and other facilities. An average of 40 man hours is needed to complete each handcrafted bike.

Large-scale production will ultimately help deliver a sustainable and affordable form of transportation to rural African populations, while also creating local employment opportunities.

Meanwhile many international training lab-workshops are available. Focusing on several key components, including factory design and setup, bamboo selection and drying, bamboo frame building, and final bike assembly, the [Bamboo Bike Studio](#) (BBS) team has built over 300 bikes in New York, and has taken their bike assembly expertise to Ghana to train 11 technicians over a two-week period. BBS also offer basic courses, laboratorial experiences, kits and [practical lessons on building bamboo bikes](#) and frames as a way of encouraging entrepreneurship and providing sustainable livelihood job skills.

To know more

[Earth Institute](#)

[Article and video in Calfee Design](#)

[Article in treehugger](#)

[Article in Bamboobike](#)

[Article in Bamboosero](#)

[Article in Africa News](#)

[Bamboo bikes in Shanghai](#)

[Bamboo bikes in Zambia](#)

[Jims bike blog](#)

